

REMARKS

I. Status of the Claims:

Claims 1-43 were pending prior to this response. The Examiner objected to claims 18, 25 and 42-43, and rejected claims 1-17, 19-24 and 26-41 in the prior Office Action.

No claims have been amended in this response, and thus, no new matter has been added. Entry and reconsideration in view of the following remarks are respectfully requested.

II. Allowable Subject Matter:

The Examiner objected to claims 18, 25, 42 and 43 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants acknowledge the indication of allowable subject matter in at least claims 18, 25, 42 and 43, and reserve the right to amend the claims later in the prosecution.

III. Response to Objection to the Specification:

The Examiner has objected to the Abstract of the Disclosure because it contains more than 150 words.

In response to the objection to the Abstract of the Disclosure, Applicants have amended the Abstract of the Disclosure herein to reduce the total number of words.

In view of the above, Applicants respectfully request that the objection to the Abstract of the Disclosure now be withdrawn.

IV. Response to Double Patenting Rejection:

Claim 1 stands rejected on the ground of nonstatutory obvious-type double patenting as being unpatentable over claim 1 of U.S. 7,522,513. Although the conflicting claims are not identical, they are not patentably distinct from each other because it has similar subject matter claimed.

The Examiner has alleged that claim 1 of U.S. 7,522,513 and the pending claim 1 are not distinguishable from each other, but has not provided details that would allow applicants to formulate an appropriate response. Applicants respectfully request that the Examiner provide a prima facie case of obviousness based on the claim limitations as required by MPEP §804(II).

V. Response to 35 U.S.C. §103 Rejection:

Claims 1-17, 19-24 and 26-41 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Maja Sliskovic, Signal Processing Algorithm for OFDM Channel With Impulse Noise (hereafter, “Maja”) in view of Digital Video Broadcasting (DVB), framing structure, channel coding and modulation for digital terrestrial television, ETSI EN 300 744 V1.1.1, January 1002, Cover and pp. 2-49 (hereafter, “ETSI”).

The Examiner alleges that the claimed embodiment of the present invention is rendered obvious by the combined teachings of Maja and ETSI. Applicants respectfully assert that this interpretation of the cited references is technically incorrect. The invention disclosed in the specification is asserted to be distinguishable from the teachings of the combined references, let alone the particular embodiment of the present invention that is recited in the pending claims.

Maja was originally cited in the background of the disclosure. While Applicants agree that Maja is somewhat relevant, this reference does not disclose “an estimate” as set forth in the independent claims. Maja differs from the claimed invention at least based on the way that carrier correction values are determined (where carrier correction values are based on deviations of certain carrier values compared to prior known information), blanking and influencing the estimate by the carrier correction values to obtain a representation of a desired signal.

The Examiner relies upon page 4, lines 4 to 11 of Maja in making the rejection. However, Applicants believe that the teaching that the Examiner contends is found in Maja is based totally on impermissible hindsight. FIG. 2C does not teach or suggest the conclusion that is presented in the Office Action. Impermissible hindsight is therefore believed to be evident in the Examiner’s reliance on a very personalized “interpretation” of FIG. 2C, which appears to be completely derived from reading the disclosure of the present invention. For example, Maja

expressly states that FIG. 2C teaches “time domain symbol corrupted with impulse (y_k),” which is distinguishable from the teaching of the present invention that the Examiner attempts to apply.

Furthermore, the Maja reference employs matrix inversion in order to get back the time domain blanked samples. The claimed embodiment of the present invention does not need to return to the time domain at all, avoiding computation of the Fast Fourier Transform (FFT) twice in addition to the cumbersome matrix inversion. The claimed invention does not transform the regenerated time domain samples into frequency domain to make corrections.

In addition to avoiding unnecessary complexity, another fundamental difference in that the claimed invention does not try to reconstruct missing samples (e.g., not in the time domain nor transformed into the frequency domain), but rather employs a statistical estimation approach using available information (e.g., pilot deviations) in the best (e.g., minimum mean square sense) possible way to obtain carrier correction values. As a result, embodiments of the present invention can calculate the carrier correction values directly in the frequency domain.

At least two benefits, and accordingly, technically advantageous effects of the above differences are clear. First, embodiments of the present invention avoid complexity (e.g., the inversion of huge matrixes and taking FFT twice). Secondly, embodiments of the present invention make one of the most accurate estimates that statistical theory can provide, as opposed to the approach disclosed in Maja, which is clearly distinguishable from what was done in Maja and not obvious even to persons skilled in the art. Additionally, there are variations offered by various embodiments of the present invention where all the pilot values can be utilized, or the approach of using only two or four closest pilots to make the estimate. These are only possible due to the significantly different approach the present invention has taken as compared to Maja.

The ETSI reference is a standardization document pertaining to DVB framing, channel coding and modulation for DVB-t. The passages cited in ETSI in making the rejection against claim 1 (e.g., page 26 section 4.5.1) teach a pilot carrier as referred by cells containing reference information transmitted at boosted power level. ETSI teaches that these pilot signals are structured within the transmission as every fourth symbol having a value derived from pseudo random binary sequence feed. The pilot in ETSI is alleged to correspond to the single

feature “prior known information” of the independent claims. However, even if these features were deemed to correspond, ETSI does not recite or imply determining carrier correction values (where carrier correction values are based on deviations of certain carrier values compared to prior known information), blanking, and influencing the estimate by the carrier correction values to obtain a representation of a desired signal. As a result, ETSI does not cure the deficiencies identified above with respect to the Maja reference.

In view of the above, it must be concluded that the reasoning cited in the Office Action is based completely on impermissible hindsight. No prior art or other evidence available at the time the invention was made has been offered to support a conclusion that one of ordinary skill in the art at the time the invention was made would have arrived at the claimed embodiment of the present invention starting from Maja as modified by ETSI. The background of the present invention even describes how Maja teaches away as described on page 2 line 20 – page 3 line 11.

Applicants respectfully assert that at least claim 1 is distinguishable from the cited references, taken alone or in combination. The other pending independent claims are constructed similarly to claim 1, and thus, are also asserted to be distinguishable. Other pending claims not specifically addressed above are distinguishable at least for depending from these independent claims. Therefore, Applicants request that the 35 U.S.C. §103 rejection now be withdrawn.

CONCLUSION

Based on the foregoing amendments and remarks, Applicants respectfully request reconsideration, withdrawal of the claim objections/rejections and allowance of this application.

AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 504827, Order No. 1004289-198US (4208-4226).

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 504827, Order No. 1004289-198US (4208-4226).

Respectfully submitted,
Locke Lord Bissell & Liddell LLP

Dated: November 12, 2009

By:



Elliot Frank
Registration No. 56,641

Correspondence Address:

Locke Lord Bissell & Liddell LLP
3 World Financial Center
New York, NY 10281-2101
(212) 415-8600 Telephone
(212) 303-2754 Facsimile